

REMARKS

Favorable reconsideration and allowance of the application are respectfully requested in view of the following remarks. Claims 39-58 are added through this Reply. Therefore, claims 1-3, 5-6, 8-13, 15-18 and 31-57 are pending. Claims 1, 31, 37 and 50 are independent.

INTERVIEW CONDUCTED

Applicants thank the Examiner for conducting an interview with Applicants' representative on November 30, 2005.

SCOPE NOT CHANGED

Some of the previously pending claims are amended for clarification purposes only. It is intended that the scope of the claims remain substantially the same.

REJECTION UNDER 35 U.S.C. § 103(a) – RAHMAN, SEZAN

Claims 1-2 and 32 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rahman, et al. (US Patent 5,991,456) in view of Sezan (US Patent 6,845,176). *See Final Office Action, Items 1-4.* Applicants respectfully traverse.

For a Section 103 rejection to be proper, a *prima facie* case of obviousness must be established. See *M.P.E.P. 2142*. One requirement to establish *prima facie* case of obviousness is that the prior art references, when combined, must teach or suggest all claim limitations. (See *M.P.E.P. 2142; M.P.E.P. 706.02(j)*.) Thus, if the cited references fail to teach or suggest one or more elements, then the rejection is improper and must be withdrawn.

In this instance, the combination of Rahman and Sezan cannot be relied upon to teach or suggest all features as recited in the claims. For example, independent claim 1 recites, in part, “a recording device which records an information indicating that the acquired image data is imaged with the acquiring imaging luminance range that is wider than the reproducing luminance range along with the image data acquired by the imaging device.”

The Examiner relies on Rahman to allegedly disclose that the dynamic range of an image acquiring device (i.e. a camera) is wider than the dynamic range of display and print devices. The dynamic range as described in Rahman merely represent a number of different discrete digital values that can be recorded as an intensity value of a pixel. For example, if the intensity value of the pixel is recorded using 10 bits, then there can be 1024 different intensity values (for example, from 0 – 1023). If only 8 bits are used, then the range of intensity values is reduced by a factor of 4 – to 256 values (for example, from 0 – 255). At best, Rahman merely indicates that the number of different intensity

values that can be recorded (e.g. 10 bits) is greater than a number of different intensity values that can be displayed or printed (e.g. 8 bits).

However, as discussed during the interview, the luminance range as recited in the claim cannot be equated with the dynamic range as discussed in Rahman and Sezan. Neither Rahman nor Sezan provides any information regarding a mapping between the particular digital intensity value of a pixel to a particular luminance (i.e. brightness) value. As such, Rahman and Sezan cannot teach or suggest the luminance range as recited.

As an illustration, an image can be recorded where each pixel is represented in 10 bits and the image can be converted for printing or displaying where each pixel is represented in 8 bits. However, it is entirely possible that the luminance range recorded is the same as the luminance range displayed. If the maximum luminance is a reflectance value of 200% for example, then the maximum digital value 1023 may be mapped to the 200% reflectance value in recording. Conversely, for printing, the same 200% reflectance value would be mapped to the maximum digital value 255. But the fact remains that the luminance range in recording (0 to 200% reflectance) is the same luminance range in printing.

In Rahman and Sezan, only the digital intensity values of the pixels in the image data are described. There is no information regarding the luminance range when the image data is acquired, let alone regarding whether the

acquiring luminance range is wider than the reproducing luminance range. For at least these reasons, independent claim 1 is distinguishable over the combination of Rahman and Sezan.

Claims 2 and 32 depend from independent claim 1. Therefore, for at least the reasons stated above with respect to independent claim 1, these dependent claims are also distinguishable over the combination of Rahman and Sezan.

The dependent claims are also distinguishable on their own merit. For example, claim 32 recites, in part, "wherein the recording device further records an information indicating maximum reflectance set in the electronic camera." The Examiner alleges that Sezan teaches this feature.

Sezan merely describes that histogram of pixel intensity values can be generated. As demonstrated above, the digital pixel intensity values cannot be equated with the luminance, let alone reflectance setting of the electronic camera.

For at least the reasons stated above, Applicants respectfully request that the rejection of claims 1-2 and 32 based on Rahman and Sezan be withdrawn.

REJECTION UNDER 35 U.S.C. § 103(a) – RAHMAN, SEZAN, TSAI

Claim 3 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rahman in view of Sezan and in further of Tsai (US Patent 5,309,243). *See Final Office Action, Items 5-6.* Applicants respectfully traverse.

It is noted that claim 3 depends from independent claim 1 and it is demonstrated above that claim 1 is distinguishable over the combination of Rahman and Sezan. Tsai is not, and indeed cannot be, relied upon to correct for at least the above noted deficiencies of Rahman and Sezan. Therefore, independent claim 1 is distinguishable over the combination of Rahman, Sezan and Tsai.

For at least due to the dependency thereon, claim 3 is also distinguishable over the combination of Rahman, Sezan and Tsai. Applicants respectfully request that the rejection of claim 3 based on Rahman, Sezan and Tsai be withdrawn.

REJECTION UNDER 35 U.S.C. § 103(a) – RAHMAN, SEZAN, BAYER

Claim 13 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rahman in view of Sezan and in further view of Bayer (US Patent 3,971,065). *See Final Office Action, Items 7-8.* Applicants respectfully traverse.

It is noted that claim 13 depends from independent claim 1 and it is demonstrated above that claim 1 is distinguishable over the combination of Rahman and Sezan. Bayer is not, and indeed cannot be, relied upon to correct for at least the above noted deficiencies of Rahman and Sezan. Therefore, independent claim 1 is distinguishable over the combination of Rahman, Sezan and Bayer.

For at least due to the dependency thereon, claim 13 is also distinguishable over the combination of Rahman, Sezan and Bayer. Applicants respectfully request that the rejection of claim 13 based on Rahman, Sezan and Bayer be withdrawn.

REJECTION UNDER 35 U.S.C. § 103(a) – RAHMAN, SEZAN, LYON

Claim 15 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rahman in view of Sezan and in further view of Lyon, et al. (US Patent 6,512,858). *See Final Office Action, Items 9-10.* Applicants respectfully traverse.

It is noted that claim 15 depends from independent claim 1 and it is demonstrated above that claim 1 is distinguishable over the combination of Rahman and Sezan. Lyon is not, and indeed cannot be, relied upon to correct for at least the above noted deficiencies of independent claim 1. Therefore, independent claim 1 is distinguishable over the combination of Rahman, Sezan

and Lyon. For at least due to the dependency thereon, claim 15 is also distinguishable over the combination of Rahman, Sezan and Lyon.

Claim 15 is distinguishable on its own merit. Claim 15 recites, in part, “a mode switching device which switches between a normal imaging mode ... and a wide luminance range imaging mode.” In other words, the mode switching device switches between two different imaging luminance ranges.

In the Final Office Action, the Examiner alleges that Lyon discloses the use of a mode switching device that switches between different modes and relies upon column 3, lines 34-41 of Lyon. A closer inspection of the relied upon portion merely indicates that an image scanning apparatus can scan the image in a high resolution scanning mode and a low resolution scanning mode.

Scanning resolution is in no way related to luminance range. Thus, Lyon cannot be relied upon to teach or suggest the feature of a mode switching device switching between the normal imaging mode and the wide luminance range imaging mode as recited in claim 15.

Applicants respectfully request that the rejection of claim 15 based on Rahman, Sezan and Lyon be withdrawn.

REJECTION UNDER 35 U.S.C. § 103(a) – RAHMAN, SEZAN, LYON, TSAI

Claim 16 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rahman, Sezan, Lyon, and Tsai. *See Final Office Action, Items 11-12.* Applicants respectfully traverse.

It is noted that claim 16 depends from claim 15, which in turn depends from independent claim 1. It is demonstrated above that claim 1 is distinguishable over Rahman and Sezan. Lyon and Tsai, individually or in combination, are not, and indeed cannot be, relied upon to correct for at least the above noted deficiencies of Rahman and Sezan. Therefore, independent claim 1 is distinguishable over the combination of Rahman, Sezan, Lyon and Tsai. For at least due to the dependency thereon, claim 16 is also distinguishable over the combination of Rahman, Sezan, Lyon and Tsai.

Claim 16 is also distinguishable on its own merit. Claim 16 recites, in part, “the subject is imaged with a normal exposure value ... in the normal imaging mode” and “the subject is imaged with an exposure value lower than the normal exposure value in the wide luminance range imaging mode.”

The portion of Tsai relied upon by the Examiner - column 2, lines 30-36 - merely indicates that if an image is taken with an exposure level other than the normal exposure level N, the image may be corrected during reconstruction of the image. Tsai is completely silent regarding any relationship between different imaging modes and the exposure values.

Applicants respectfully request that the rejection of claim 16 based on Rahman, Sezan, Lyon and Tsai be withdrawn.

REJECTION UNDER 35 U.S.C. § 103(a) – RAHMAN, SEZAN, NAKAGAWA

Claims 17 and 18 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rahman in view of Sezan and in further view of Nakagawa, et al. (US Patent 6,738,092). *See final Office Action, Items 13-15.* Applicants respectfully traverse.

It is noted that claims 17 and 18 depend from independent claim 1 directly or indirectly, and it is demonstrated above that claim 1 is distinguishable over the combination of Rahman and Sezan. Nakagawa is not, and indeed cannot be, relied upon to correct for at least the above noted deficiencies of Rahman and Sezan. Therefore, independent claim 1 is distinguishable over the combination of Rahman, Sezan and Nakagawa. For at least due to the dependency thereon, claims 17 and 18 are also distinguishable over the combination of Rahman, Sezan and Nakagawa.

Claims 17 and 18 are also distinguishable on their own merit. According to claim 17, two image data of a subject are imaged and recorded at one time. One image is imaged with a luminance range that is substantially the same as

the reproducing luminance range and the other image is images with a luminance range that is wider than the reproducing image.

In the Final Office Action, the Examiner alleges that Nakagawa discloses the use of a recording device that stores two images of different quality at the same time and refers to Figure 5. Figure 5 of Nakagawa and the related descriptions merely indicate that an original picture data and a thumbnail image of the original picture data are stored in memory 24. *See Nakagawa, column 5, lines 14-41.*

Clearly, since thumbnail data are generated based on the original picture data, it cannot be that the original picture data and the thumbnail data are imaged with different luminance ranges. This alone sufficiently demonstrates that Nakagawa cannot be relied upon to teach or suggest the above recited feature of claim 17. Claim 18 depends from claim 17.

Applicants respectfully request that the rejection of claims 17 and 18 based on Rahman, Sezan and Nakagawa be withdrawn.

REJECTION UNDER 35 U.S.C. § 103(a) – RAHMAN, SEZAN, SATO

Claims 31 and 33 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rahman in view of Sezan and in further view of Sato (US Patent 6,665,365). *See final Office Action, Items 16-18.* Applicants respectfully traverse.

Regarding claim 31, it is noted that the claim recites, in part, “a recording device which records ... luminance range information indicating that the acquiring luminance range is wider than the reproducing luminance range.” It is demonstrated above that Rahman and Sezan cannot teach or suggest at least this feature. Sato is not, and indeed cannot be, relied upon to correct for at least the above noted deficiencies of Rahman and Sezan. This alone is sufficient to distinguish claim 31 from the combination of Rahman, Sezan and Sato.

There are other distinctions as well. Independent claim 31 recites, in part, “a reading device which reads the first image data and the acquiring luminance range” and “a signal processing device which produces, based on the first image data and the acquiring luminance range, second image data with the reproducing luminance range required for reproducing according to the luminance information.” In the final Office Action, the Examiner alleges that Sato teaches the reading device and the reproducing device as recited and relies upon column 4, line 40 – column 5, line 11 and element 47 in Figure 3.

The relied upon portion of Sato merely indicates that an image signal is stored in a buffer memory 43 along with data indicating the order of the processing that the image went through before storing the result in the buffer memory 43. With this information, image reproduction may be accomplished by performing a restoration process which is the reverse of the process that the

image was subjected to prior to being stored in the buffer memory 43. *See Sato, column 4, line 40 - column 5, line 11.*

As illustrated in Figures 1 and 2 of Sato, the correction processes include white balance, shading correction, defect correction, gamma correction, matrix calculation, knee process and peripheral correction. Nakagawa is completely silent regarding recording luminance correction at all.

Since the restoration process is merely a reverse of the correction processes and the correction processes do not include luminance correction, it naturally follows that Sato cannot be relied upon to teach or suggest a feature of producing based on the acquiring luminance range the second image data with the reproducing luminance range required for reproducing on the reproducing device as recited in claim 31.

Claim 33 depends from independent claim 1 and it is demonstrated above that claim 1 is distinguishable over Rahman and Sezan. Sato is not, and indeed cannot be, relied upon to correct for at least the above note deficiencies of Rahman and Sezan. Therefore, claim 1 is also distinguishable over the combination of Rahman, Sezan and Sato. For at least due to the dependency thereon, claim 33 is also distinguishable over the combination of Rahman, Sezan and Sato.

Applicants respectfully request that the rejection of claims 31 and 33 based on Rahman, Sezan and Sato be withdrawn.

REJECTION UNDER 35 U.S.C. § 103(a) – RAHMAN, SEZAN, SATO, KIM

Claims 10-12, 34-35, 5-6 and 8-9 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rahman, Sezan, Sato and Kim (US Patent 5,710,594). *See final Office Action, Items 19-28.* Applicants respectfully traverse.

It is noted that claims 10-12, 34-35, 5-6 and 8-9 depend from independent claim 1 directly or indirectly, and it is demonstrated above that claim 1 is distinguishable over the combination of Rahman, Sezan and Sato. Kim is not, and indeed cannot be, relied upon to correct for at least the above noted deficiencies of Rahman, Sezan and Sato. Therefore, independent claim 1 is distinguishable over the combination of Rahman, Sezan, Sato and Kim. For at least due to the dependency thereon, these claims 10-12, 34-35, 5-6 and 8-9 are also distinguishable over the combination of Rahman, Sezan, Sato and Kim.

These dependent claims are also distinguishable on their own merit. For example, claim 10 recites, in part, “wherein the recording device records information that represents a relationship between the image data and digital values of the converted image data to be recorded while dividing the relationship into an area where the relationship is represented by the logarithmic function and an area where the relationship is represented by the

linear function.” In other words, the relationship has both a logarithmic portion and a linear portion.

In the Final Office Action, the Examiner relies upon Kim to allegedly teach the features as recited in claim 10. However, it is noted that Kim merely discloses that a gamma correction operation is used to maintain a linear relationship between an optical signal input to a camera and an optical signal output from a receiver. *See Kim, column 1, lines 13-15.* Kim recognizes that the gamma characteristics of the receiver changes. *See Kim, column 1, lines 28-30.* Kim goes on to state “as a result, the gamma characteristics of the video camera must also be adjusted so that the signal input to the video camera and the signal output from the receiver maintain a linear relationship.” *Emphasis added; see Kim, column 1, lines 30-34.*

Kim is completely silent regarding any relationship that even resembles a logarithmic function. Therefore, Kim cannot be relied upon to teach or suggest the feature of dividing the relationship between the image data and the digital value to be recorded that includes an area where the relationship is represented by a logarithmic function.

It is also noted that Kim is silent regarding storing the relationship information in any storage whatsoever. For at least the reasons stated above, claim 10 is distinguishable over Rahman, Sezan, Sato and Kim on its own merit.

Claim 11 recites, in part, “wherein the recording device records the at least one of the base, the first-order coefficient and the zero-order coefficient of the logarithmic function.” The Examiner alleges that Sato discloses recording coefficients as attached information for image data in the same image file as the image data.

But as noted above, Sato merely discloses, at best, information related to the processing that includes white balance, shading correction, defect correction, gamma correction, matrix calculation, knee process and peripheral correction. Sato is completely silent regarding whether any of these processes have any resemblance to a logarithmic functional relationship. Therefore, Sato cannot be relied upon to teach or suggest the feature of recording coefficients of the logarithmic function and recording coefficients of the linear function. Thus, claim 11 is distinguishable on its own merit.

Claim 12 recites, in part, “wherein the recording device records the image file in one of a directory and a folder provided for each form of conversion.” The Examiner relies upon column 3, lines 54-65 and Figure 2 of Sato to allegedly teach this feature.

However, a closer inspection of the relied upon portion merely describes a structure of an image file. According to Sato, the image file is composed of an image recording area M1 and information recording area M2. *See Sato, Figure 2; column 3, lines 54-59.* It is noted that areas M1 and M2 are part of a single

image file. Sato is completely silent regarding the organization of files in directories or folders. Thus, claim 12 is distinguishable on its own merit.

Claim 34 recites, in part, “wherein the recording device records information that represents a relationship between the image data and digital values of the converted image data to be recorded.” It is demonstrated above that Kim is silent regarding recording any information related to a relationship in a storage. Thus, claim 34 is distinguishable on its own merit.

Claim 35 recites, in part, “wherein the recording device records information that represents a relationship between the image data and digital values of the converted image data to be recorded by the logarithmic function and records at least one of a base, a first-order coefficient and a zero-order coefficient of the logarithmic function.” It is demonstrated above that Kim cannot be relied upon to teach or suggest at least this feature. Therefore, claim 35 is distinguishable on its own merit.

Claim 6 recites, in part, “wherein the recording device records the image file in one of a directory and a folder provided for each form of conversion.” It is demonstrated above that Sato cannot be relied upon to teach or suggest at least this feature. Therefore, claim 6 is distinguishable on its own merit.

Claim 8 recites, in part, “wherein the recording device records the at least one of the base, the first-order coefficient and the zero-order coefficient.”

It is demonstrated above that such a feature distinguishes claim 8 on its own merit.

Claim 9 recites, in part, "wherein the recording device records the image file in one of a directory and a folder provided for each form of conversion." It has been demonstrated above that such a feature distinguishes claim 9 on its own merit.

For at least the above stated reasons, Applicants respectfully request that the rejection of claims 10-12, 34-35, 5-6 and 8-9 based on Rahman, Sezan, Sato and Kim be withdrawn.

REJECTION UNDER 35 U.S.C. § 103(a) – RAHMAN, SEZAN, SATO, YAMAGAMI

Claim 36 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rahman, Sezan, Lyon and Yamagami (US Patent 6,522,830). *See final Office Action, Items 29-30.* Applicants respectfully traverse.

It is noted that claim 36 depends from independent claim 1 and it is demonstrated that claim 1 is distinguishable over the combination of Rahman, Sezan and Lyon. Yamagami is not, and indeed cannot be, relied upon to correct for at least the above noted deficiencies of Rahman, Sezan and Lyon. Therefore, independent claim 1 is distinguishable over the combination of Rahman, Sezan, Lyon and Yamagami. For at least due to the dependency thereon, claim 36 is also distinguishable over the same combination.

Applicants respectfully request that the rejection of claim 36 based on Rahman, Sezan, Sato and Yamagami be withdrawn.

REJECTION UNDER 35 U.S.C. § 103(a) – RAHMAN, LYON, YAMAGAMI

Claims 37-38 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Rahman in view of Lyon and in further view of Yamagami. *See final Office Action, Items 31-33.* Applicants respectfully traverse.

Independent claim 37 recites, in part, “an imaging device having a normal imaging mode in which the subject is imaged with a normal luminance range required in reproducing or printing ... and a wide luminance range imaging mode in which the subject is imaged with a wide imaging luminance range wider than the luminance range required in reproducing or printing.” As amply demonstrated above, Rahman and Sezan do not teach or suggest any feature related to the luminance range. Yamagami cannot correct for at least this deficiency of Rahman and Sezan. Therefore, claim 37 and the dependent claim 38 are distinguishable over the combination of Rahman, Lyon and Yamagami.

For at least the above stated reasons, Applicants respectfully request that the rejection of claims 37 and 38 based on Rahman, Lyon and Yamagami be withdrawn.

NEW CLAIMS

Through this Reply, claims 39-58 are added. All new claims are distinguishable over the cited references individually or in any combination. Claims 39-49 depend from independent claims 1, 31 or 37 directly or indirectly.

Independent claim 50 recites, in part “an imaging device configured to image a subject in a luminance mode to generate raw image data, wherein the luminance mode is one of at least a first luminance mode and a second luminance mode, wherein in the first luminance mode, the imaging device images the subject in a first luminance range.”

Claims 51-58 depend from independent claim 50 directly or indirectly.

Applicants respectfully request that the new claims be allowed.

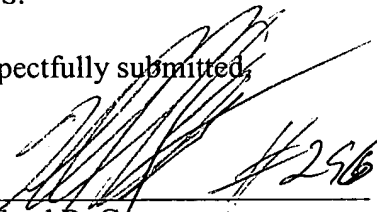
CONCLUSION


All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance. Should there be any outstanding matters that need to be resolved, the Examiner is respectfully requested to contact Hyung Sohn (Reg. No. 44,346), to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By  #29680
Michael R. Cammarata
Registration No.: 39,491
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant


MRC/HNS